

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

SECRET

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COUNTRY East Germany

REPORT

SUBJECT Development of Point-Contact
Type Germanium Transistors

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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
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1. Large-scale production of point-contact germanium transistors at VEB Werk fuer Bauelemente der Nachrichtentechnik, Teltow (formerly Dralowid), has not yet started. However, the enterprise has been engaged in the production of zero-series of several types of transistors. These types are:
 - a. 1NC-010 through 1NC-012: Amplifier transistors with a maximum amplification factor of 17 decibels.
 - b. 1NC-020 through 1NC-022: Amplifying transistors with a maximum amplification factor of 20 decibels.
 - c. 2NC-010: Circuit transistor.
 - d. 3NC-010: Oscillator transistor.
2. Production of the zero-series of the transistor types mentioned represents the successful conclusion of the transistor development. Production is supposed to start in the near future.
3. In April 1955, the enterprise organized a meeting of a large number of scientists and technicians and the use of transistors was explained to them in a lecture given by Dr. Matthias Falter, head of the Dralowid Research and Development Department. On this occasion, a radio receiver and loud-speaker circuit operated with transistors instead of tubes was successfully demonstrated.
4. Ten transistors of the 1NC-010 type were completed in late April 1955. The following are the data on the tenth of these transistors designated by A/010. The data were obtained in a test carried out by the enterprise

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25 YEAR
RE-REVIEW

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(Note: Washington distribution indicated by "X"; Field distribution by "#")

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Input resistance with open collector	230 Ohms
Basis resistance	85 Ohms
Output resistance with open emitter	14 kilo-ohms
Transistor resistance	17 kilo-ohms
Current amplification	1.21
Voltage amplification	74
Short circuit stability	0.45
Performance amplification	14.7 decibels
Limit frequency	0.55 MHz
Collector voltage	30 volts
Collector current	3.5 milli-amperes
Emitter voltage	0.26 volt
Emitter current	1 milli-amperes
Favorable input resistance	200 Ohms
Favorable output resistance	10 kilo-ohms
Maximum collector voltage	42 volts
Maximum collector dissipation	100 milli-volts
Maximum emitter dissipation	10 milli-volts
Maximum input alternating voltage	0.15 volt
Maximum ambient temperature	40° Centigrade

5. As of early May 1955, the work of the Dralowid research and development team on the development of junction-type transistors had not progressed beyond the stage reached in November 1954, i.e. beyond the development of junction-type rectifiers from n-germanium and indium. Development of these rectifiers is considered to be an initial step in the development of junction-type transistors. Even the junction-type rectifiers so far developed are not functioning well and production of this type of rectifier has not yet started.

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